

121
by the Author
A

LECTURE,

INTRODUCTORY

TO A COURSE OF LECTURES

ON

THE CAUSE, SEAT AND CURE

OF

DISEASES.

PROPOSED TO BE

DELIVERED IN THE CITY OF BALTIMORE,

BY JOHN CRAWFORD, M. D.

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ERRATA.—Page 9. 6th line from top for regard read reward.
p. 14, l. 4, for *enquriies* read enquiries.—p. 23, l. 6, for *aphorisms*
read aphorism.—p. 25, l. 10, from the bottom, for *Tracts* read
Facts.—p. 27, l. 7 from the bottom, omit the word of.—p. 32 5th
line from top, for *of what is*, read what is of.—p. 36, 12th line from
bottom, read mankind be made.—p. 40. 10th line from bottom, for
in all read from.—p. 45. 3d line from bottom, for *what and* read
and is what.—p. 47. 3d line, read animated principle.

LECTURE.

THE cause, seat and cure of diseases are, my friends, the objects to which I beg leave to solicit your attention. The cause, as being of primary importance, shall be first considered—the seat of our maladies is necessary to be known in order to give a clear idea of the plan that should be pursued for their removal, and the adoption of proper remedies will depend upon our correct knowledge of their qualities and effects—an elucidation of these momentous objects, in their order, shall claim the utmost efforts of my feeble capacity.

An investigation of the causes of disease has engaged the exertions of men of the first talents, the most eminent for genius and penetration, in every age of the world. Success has not been commensurate with the labour bestowed on this intricate subject—there has been

nothing yet offered which has commanded universal assent. Were the truth discovered, it would be proof against every opposition ; but as the subject is still open to discussion, farther attempts to remove the difficulties in which it is involved, assuredly should not be hastily condemned. The numerous efforts that have been made, the triumph with which plausible schemes have been received, and the avidity with which successive adventurers have engaged in the arduous pursuit, evince the high value which has been ever attached to it. When we are acquainted with the failure of men so superior for brilliancy of intellect, so illustrious for their mental powers and extensive information, it will be impossible to avoid the imputation of temerity, in attempting, under so great a deficiency in all these respects, what has been hitherto found insurmountable. But as the end in view so deeply concerns the best interests of life, and as humble means have so often achieved what has been denied to those of the most exalted pretensions, I trust I shall be pardoned for submitting to your candid judgment, observations made on various occasions, and knowledge acquired during a course of many years.

The spirit of observation, as well adduced by Bonnet in his analysis of the faculties of the human soul, is the universal spirit of the arts and sciences ; it is only attention applied with rule to different objects. A philosopher who would furnish rules of art to observe, would teach us the means to direct and to fix the attention—he would shew us its happy effects in the numerous discoveries of which it would be productive—If that philosopher had himself discovered any truths, if he furnished us with a history of the order in which they occurred to his mind, the history would be that of his attention.—It is to this detail, I entreat, my respected hearers, your patient regard, it is on this alone I found my hopes of not proving wholly unworthy of your approbation.

As it is extremely difficult to account for every thing which is obscure or concealed from our immediate perception, we ought to employ our utmost care to discover the truth, by strictly attending to the operations of nature, before we attempt to reason, as this is always liable to deceive us. It is indubitable that if we do not keep the immutable rules and order which supreme wisdom has established in nature, steadily

in view, as far they are discernable, we are liable to be deceived in every progressive step, and our experience, instead of yielding to us the satisfaction we promise ourselves from it, will often plunge us still farther into error. This erroneous proceeding has, I fear, been the great obstacle to the success of those who have been heretofore occupied with our present enquiry. Ingenious men possessing every advantage of information, have ventured to reason, before they had taken time to duly observe the relation of things, or the strict connexion by which they are united to each other—hence they were continually obnoxious to mistakes, and every mistake, every perverted view, contributed to such misrepresentations as were quickly liable to detection, and to the overthrow of whatever system they erected on so unstable a foundation. The consequence of this has been, that the opinions prevalent in one age, as truths beyond the reach of controversy, were refuted and rejected by another, and as there was nothing offered capable of supplying the defect, they rose again to reception in remoter times. Thus sometimes error was mingled with truth, and sometimes contrarieties of error took place of each

other by reciprocal invasion. The tide of seeming knowledge which inundated one generation, retired and left another a barren waste.

Approbation, though long continued, if only the effect of erroneous conceptions, is then the approbation of fancy or prejudice—the irregular combinations of fanciful invention may delight awhile by the novelty of which the common satiety of life sends us all in quest; but the pleasure of sudden wonder is soon exhausted, and the mind can only repose on stability and truth—the sand accumulated by one flood is dispersed by another; against the rock, the winds and the waves exert their utmost force, it remains unmoved.

Pemberton, in his view of Sir Isaac Newton's Philosophy, has some fine remarks that were then applicable to the sciences in general. At present it is to be lamented they are more suitable to the state of pathology than to any other, of which proofs shall be offered in the sequel—I shall profit by his sentiments without adhering to the text. Nothing is more congenial to the human mind than the contemplation of truth—almost the whole of mankind has a strong desire for knowledge, and deems it disgraceful to mistake, to err,

or to be in any way deceived. This is evidenced by the general inclination to gain an acquaintance with the operations of nature; which disposition to enquire after the causes of things is so prevalent, that all men are more or less influenced by it. There is scarcely one, who in consulting a physician, does not express a desire to be informed of the cause of his disease.—The propensity to know the origin of things, probably constitutes the chief difference between the human and the brute creation; the inferior animals partake with us of the pleasures that flow from the bodily senses and appetites, but our minds are furnished with a superior sense, by which we are capable of receiving various degrees of delight, where the creatures below us perceive no difference. The thoughts of the human mind are too extensive to be confined only to the providing and enjoying what is necessary for the support of our being; and a precious gift this is. The supply of our wants could not give sufficient employment to thousands and tens of thousands, who, were it not for the gratification of taste, and the indulgence in adorning, must remain without occupation. It is farther—this taste, which has given rise to poetry, oratory, and

every branch of literature and science, thus exercising the mind of those who can be spared from bodily labour—to such it is given to feel great pleasure in conceiving strongly and in apprehending clearly, even where the passions are not concerned, a sufficient ^{reward} ~~regard~~ for indefatigable industry. Perspicuous reasoning appears not only beautiful, but when set forth in its full strength and dignity, it partakes of the sublime, and not only delights, but warms and elevates the soul. This is the source of our strong desire of knowledge, and the same taste for the sublime and beautiful, directs us to choose particularly the productions of nature for the subject of our contemplation.

Our Creator having so adapted our minds to the condition wherein he has placed us, that all his visible works, before we enquire into their construction, strike us with the most lively ideas of beauty and magnificence;—is there any part of his works that can be more interesting to us than ourselves?

But if there is so strong a passion in contemplative minds for natural philosophy, how grievous must it be to devote nearly the whole of life to it, as has often happened, and to have

made no progress in the attainment of what was sought for? In what relates to medicine, the writers in this science have always manifested a degree of despair at its being ever brought to that certainty which promised any satisfaction. But it has too frequently been their practice to frame conjectures, and if upon comparing them with things, there appeared some kind of agreement, though often very imperfect, it was held sufficient; yet nothing less was undertaken than entire systems, and fathoming at once into the depths of nature, as if the secret causes of natural effects contrived and framed by infinite wisdom could be searched out by the slightest endeavours of our weak understandings.—Whereas the only method that can afford us any prospect of success, in this difficult work, is to make our enquiries with the utmost caution by very slow degrees, and to extend them to every object by which what is obscure in one may be conspicuous in another—after our most diligent, and best directed labour, the greatest part of our nature, will no doubt, for ever remain beyond our reach.

The neglect of the proper means to enlarge our knowledge, joined with attempting what was

quite out of the power of our limited faculties, the illustrious Bacon judiciously observes to be the great obstruction to the progress of science. Bacon has rightly observed that there are but two ways that can be taken in the pursuit of natural knowledge. One is to make a hasty transition from our first and slightest observations on things to general propositions, and then to proceed upon those propositions, as certain and incontestible principles, without farther examination. The other method, the only true one, but in our art hitherto unattempted, is to proceed cautiously, to advance step by step, reserving the most general principles, for the last result of our enquiries—Concerning the first of these two methods, where objections which happen to appear against any such principles taken up in haste, are evaded by some frivolous distinction, when the principle itself ought rather to be corrected, the united endeavours of all ages cannot make it successful, because the original error in the first conception of the mind cannot afterwards be remedied; if we set out in a wrong way, no diligence or art we can use, while we follow so erroneous a course, will ever bring us to our designed end—and doubtless it

can not prove otherwise ; for in this spacious field of nature, if once we forsake the true path, we shall immediately lose ourselves, and must forever wander with uncertainty.

The impossibility of succeeding in so faulty a method of philosophising, the acute Bacon endeavours to prove from the many false notions and prejudices to which the mind of man is exposed. And since experience has evinced that men are so liable to fall into these wrong tracts of thinking, as to incur great danger of being misled by them, even while they enter on the true course in pursuit of nature ; I trust I shall be excused, if, by insisting a little particularly upon this argument, I endeavour to remove whatever prejudices of this kind may remain to obstruct the attainment of correct views in prosecuting the medical art.

These prejudices and false modes of conception are reduced by Bacon, under four distinct heads.

The first head contains, what we are subject to from the very condition of humanity, through the weakness both of our senses and the faculties of the mind ; seeing the subtilty of nature far exceeds the greatest subtilty of our senses,

or acutest reasonings. One of the false modes of conception, is the forming to ourselves a fanciful simplicity and regularity in natural things. There is certainly a simplicity and a regularity in natural things, but they are not discoverable by intuition, they are not such as our fancy may suggest; they are only to be found by strict search and accurate examination. The second erroneous turn of mind is, that all men are in some degree prone to a fondness for any notions which they have once imbibed; whereby they often wrest things to reconcile them to those notions, and neglect the consideration of whatever will not be brought to an agreement with them. Thus it is that men are continually accounting for their diseases, attributing them to some error in diet, or exposure to the weather, without stopping to enquire whether such causes were adequate to such effects. It is astonishing the facility with which the mind receives any suggestions of this kind. There is also a farther impediment to true knowledge, mentioned under the same head: that through the weakness and the imperfections of our senses, many things are concealed from us, which have the greatest effect in producing natural appearances. This

concealment is the great obstacle with which we have ever had to contend, and a disclosure of it can never be hoped for whilst we confine our enquiries to our own bodies, reasons for which will be hereafter conclusively offered. Our minds are ordinarily most affected by that, which makes the strongest impression on our organs of sense; whereby we are apt to judge of the importance of things by a wrong measure—so because in the cold fit of an intermitting fever, the whole body is convulsively agitated, the cause has been attributed to spasm—As well might we assert that a trembling of the ground was the cause of an earthquake.

The second head contains the errors to which particular persons are more especially obnoxious. One of these is the consequence of a preceding observation, that as we are exposed to be captivated by any opinions which have once taken possession of our minds; so in particular, natural knowledge has been much corrupted by the strong attachment of men to some one part of science, of which they deem themselves the inventors, or at least to have prosperously advanced, or about which they have spent much of their time; and hence have been apt to conceive

it to be of greater use in the study of natural philosophy than it really was—like Aristotle, who reduced his physics to logical disputations; the mathematicians, who applied their rule and measure to every function of the human body, and the chymists, who have thought that nature could be laid open by the force of their fires. Some again are wholly carried away by an excessive veneration for antiquity; this is not the fault of the present day; others, by a too great fondness for the moderns, the only object now of any attention; few have their minds so well balanced, as neither to depreciate the merit of the ancients, nor yet to despise the real improvements of later times. To this may be added a difference in the genius of men; that some are most fitted to observe the similitude there is in things, while others are more qualified to discern the particulars wherein they disagree; both of which dispositions of mind are useful; but to the prejudice of philosophy, men are apt to run into excess each way, while one sort of genius dwells too much upon the gross and sum of things, and the other upon trifling minutiae and shadowy distinctions.

Under the third head of prejudices and false

notions we are to consider the lax and indefinite use of words employed for conveying our ideas to others. This has ever been a source of perplexity to learners; it is this which has given occasion for such voluminous commentators on every author of any reputation. Definitions have rather increased than diminished the evil. The truth is only to be taught by describing it; but of this more hereafter, as also of the quarrels that have obtained among physicians about mere words—Words thus to be guarded against are of two kinds. Some are names of things that are imaginary, such are wholly to be rejected, and of such the medical nomenclature chiefly consists. There are other terms of considerable number in our science, that allude to what is real, though their signification is confused, and these latter must of necessity be continued in use; but their sense cleared up and freed as much as possible, from obscurity.

The last general head of these errors comprehends such, as follow from the various sects of false philosophers; which are divided into three sorts, the sophistical, emperical and sceptical. The first of these is built upon speculations only, without experiments; the second

where experiments are blindly adhered to without proper reasoning upon them; and by the third, wrong opinions of nature fixed in men's minds by disregarding the power of the Deity in conducting the affairs of the universe, or in fashioning the materials of which it is composed; who in fact give to the things created the power of the Creator, and appropriate to nature what belongs only to God.

Through a defect in attending to the communication that must subsist between our spiritual and material nature it is, that the medical systems in general are so imperfect, so inconsistent indeed with all the known works of the Deity. This error evidently leads to infidelity; it is the origin of the common reproach to which the faculty have been so long obnoxious. Being led by their professional studies to a more intimate acquaintance with the physical causes and operations of the animal economy, too many of them, either from want of faith, or a negligence of the spiritual nature, have attributed to second causes what could alone belong to the first and so by resting there, have, as above remarked, lost sight of their Creator. It can not be that true divinity and true philosophy are ever at variance

with each other; on the contrary, when rightly understood they mutually and powerfully support each other. Who but the Deity could operate the wonders that are continually pressing upon our regards? Attributed to the Deity, wonder is changed into admiration, reverence and devotion! It may be safely alleged that philosophy never can be brought to perfection unless the mind of the investigator is suitably impressed with the necessity of having his thoughts continually directed to the stupendous author of the work. It cannot be too frequently nor too strongly urged, that our success will be precisely in proportion to our discovery of the designs of him by whom the objects of our enquiry were contrived and executed.

These are the four principal canals by which philosophical errors have flowed in upon us.—The faulty method of proceeding in philosophy, is so far from assisting us towards overcoming these prejudices, that it is rather suited to rivet them in the mind. How great reason then have we to call this way of philosophising, the parent of error, and the bane of all knowledge? For, indeed, what else but mistakes can so bold and presumptuous a treatment of supreme wis-

dom produce? Have we the sagacity necessary to frame a world, that we should think so easily, and with so slight a search to enter into the most secret springs of nature and discover the original causes of things? What chimeras, what monsters has not this preposterous method brought forth? What schemes, or what hypotheses of the subtlest wits has not a stricter enquiry into nature not only overthrown, but manifested to be ridiculous and absurd? Every improvement we make in this science, discovers to us more and more the weaknesses of our guesses. Has it not followed that the very name of theory is now treated with contempt? Harvey, by that one discovery of the circulation of the blood, has dissipated all the speculations and reasonings of many ages, on the animal economy. Aselius, by detecting the lacteal veins, shewed how little ground all physicians and philosophers had in conjecturing that the nutritive part of the aliment was absorbed by the mouths of the veins spread upon the bowels: Pequet by finding out the thoracic duct, has evidently proved the vanity of the opinion, which was persisted in, after the lacteal vessels were known, that the alimentary juice was con-

vayed immediately to the liver, and there communicated to the blood. John Hunter, by ascertaining the solvent power of the juices of the stomach terminated the disputes about digestion; and permit me to add the name of my revered brother, Adair Crawford, who was the first to ascertain by actual experiment, that animal heat was derived from the air in respiration, and thus brought to a conclusion the conflicting opinions on that intricate subject.

As these things evince the great absurdity of proceeding in philosophy, on conjectures, by informing us how far the operations in nature are above our low conceptions; so on the other hand, such instances of success from a more judicious method, shew us, that our bountiful maker has not left us wholly without means of improving and delighting ourselves in the contemplation of his wisdom. That by a just way of enquiry into nature, we could not fail of arriving at discoveries very remote from our first apprehensions.

The principles then, of true philosophy are, upon no consideration to indulge conjectures concerning the powers and laws of nature, but to make it our endeavour, with all diligence, to search out the real and true laws, by which the

constitution of things is regulated. The philosopher's first care must be to distinguish what he sees to be within his power, from what is beyond his reach; to assume no greater degree of knowledge, than what he finds himself possessed of; but to advance by slow and cautious steps; to search gradually into natural causes; to secure to himself the knowledge of the most immediate cause of each appearance, before he extends his views farther to causes more remote. This is the method in which philosophy ought to be cultivated; which does not pretend to so great things as the more airy speculations, but will perform abundantly more: we shall not, perhaps, to the skilful, seem to know so much; but our real knowledge will be greater. And certainly it is no objection against this method, that some others promise what is nearer to the extent of our wishes; since this, if it will not teach us all we could desire to be informed of, will however gain us some true light into nature, which no other can do. Nor has the philosopher any reason to think his labour lost, when he finds himself stopt at the cause first discovered by him, or at any other remote cause short of the original: for if he has but suffi-

ciently proved any one cause, he has entered so far into the real constitution of things, has laid a sufficient foundation for others to work upon, and has facilitated their endeavours in the search after yet more distant causes. Besides, he may in the mean time apply the knowledge of these intermediate causes to many useful purposes. Farther, a mind stocked with the information thus provided, may render it useful in explaining difficulties which, without it, would have been impracticable and which never entered into the thoughts of the original discoverer. Indeed being able to make practical deductions from natural causes, constitutes the great distinction between the true philosophy and the false. Causes assumed upon conjecture, must be so loose and undefined that nothing particular can be collected from them.

It is not suitable to my inclination, nor do I conceive it would promote the end I have in view, to comment upon the particular theories hitherto advanced respecting the causes of disease. Every system hitherto proposed has had its advocates, and many of them have obtained a currency that has endured for ages ; but there are none that have not experienced opposition

and they have been successively overthrown, down to the very last that has been offered. There are none, however, that have not been suggested with diffidence—they have not evidently had the full confidence of their authors. The first aphorisms of Hippocrates, never denied by his successors to the present day, is in full proof of this. “Life is short, the art is long, opportunity fleeting, experience uncertain, judgment difficult.” So unsuccessful has every adventurer been, that it is now the common consent of mankind that a pursuance of the plans adopted by all that have undertaken the arduous task to the present time, must be unproductive. A different course has long had possession of my mind. A conviction that the truth could only be discovered by strictly adhering to the induction necessarily arising from the consideration of ascertained facts: I have endeavoured to make them subservient to the elucidation of objects in their very nature obscure, and which otherwise must remain inscrutable. This is conforming to the injunctions of the illustrious sages, Bacon and Newton, already adduced—and this is the measure which has contributed so much to advance all the other sciences.

During the prosecution of my medical studies in early life, and still more when I came to be extensively engaged in practice, I perceived, often with mortification, how inadequate the fundamental rules of the art, as taught in the schools and in books, were to just conceptions of diseases. They offered nothing satisfactory, as leading to a justifiable practice. I could not trace in any plan of practice, although derived from the most eminent authorities, a conformity to the rules laid down by these very authorities. The practice, it may be asserted, was from the beginning, whatever importance theorists might attach to their speculations, empirical. That is to say, the remedies in use from the earliest times for diseases manifesting certain symptoms, were continued in use. The theorists, according to their several views, attributed to the medicines particular effects; but still emetics, cathartics, sudorifics, &c. &c. were employed; they were never excluded; their exhibition, it is true, frequently quadrated with the views entertained of the cause of disease, and their effects were explained in conformity to these views, but they were never abandoned by any practitioners; they were by all considered as

chief helps to the relief from suffering. Nearly twenty years ago conceptions arose in my mind which, could they be realized, would reconcile the practice to the origin of every malady, and this led to enquiries which disclosed a multitude of facts fully illustrative of the opinions I had formed. I was astonished to find they had already obtained, to the full extent of my previous apprehensions. What I believed was confined to myself alone, proved to have been largely treated of by many authors. In others there were proofs of what I was in search of, never imagined by those who adduced them.

The plan recommended by the great Bacon, had been adopted by the greater part of Europe, nor ~~has~~ it been overlooked in this country, ^{Facts} ~~Facts~~ were multiplied, and it only required that these helps should be brought into correct apposition with each other, to attain the full completion of my purposes. It only remained, beyond what others had done, to reconcile the various phenomena to the invariable laws of nature. This I shall attempt, and in my reasoning on many of these phenomena, I shall certainly be obliged to frequently offer my conjectures, and although the premises are suffi-

ciently tenable, according to my judgment, they may not be so to others. As above remarked, I have made a use of many authorities to which the authors could never have deemed them applicable—I may experience the same fate.—Many good reasons may hereafter be given not only for rejecting what I allege, but also in support of it, far exceeding my present imagination. I have derived helps from authors, of the existence of whom I was ignorant at the commencement of my search. I may furnish helps to others, of which they have at present no manner of conception. I have had great encouragement in proceeding as I propose, by the justly celebrated Bonet, in his ingenious contemplations on organized bodies. We cannot too much multiply conjectures on an obscure subject ; they are so many lines by which we may be conducted to truth by different routs, and which may afford the means of making new discoveries. Conjectures are the sparks, the fire at which the true philosopher illumines the torch of experience. I approve the modest timidity of philosophers who confine themselves to facts; but I cannot blame the ingenious boldness of those who sometimes penetrate beyond

their limits. Let us indulge our imagination, provided reason holds the curb of this dangerous courser. We shall in bestowing our reason on the surrounding objects, in forming new conjectures, and in suggesting new hypothesis, often succeed beyond our hopes. We must not however forget that they are only conjectures, and that our hypothesis must not claim the credit of proofs, further than they are supported by incontrovertible evidence.

This mode of proceeding cannot assuredly incur censure. It is well observed by the Abbe Fontana, that facts alone are not sufficient to dissipate the obscurity in which they are frequently enveloped. A train of observations without the help of a skilful hand to apply them, would be, at the best, but the useless proof of a painful application. In the same way the most brilliant systems, the rich and fertile imagination ~~of~~ a philosopher can supply do not suffice to satisfy the naturalist, unless they are founded on good experiments. To come at the causes which regulate the course of the celestial bodies, nothing less was wanted than the long series of observations made by the Chaldean shepherds and the powerful aid of the creative genius of a

Newton. I am well aware of the danger to which I expose myself, as well in referring to so illustrious an example, for prosecuting a measure which must, if it succeeds, be conducted on the same plan: as also for hazarding a departure from the view of diseases which has occupied most others. This must give extensive offence: it must occasion strong disapprobation and will probably subject me to the most determined opposition.

No man, if we except perhaps a very few, has ever attempted to turn the thoughts of his contemporaries from the channels in which they have been accustomed to run, that has not experienced much resistance. Such a propensity forms a necessary part of our nature. I shall have occasion hereafter, to notice the influence of habit on every animal; it is more conspicuous in man than in any other; upon it depends all the perfections to which we can ever aspire. It is by contracting a partiality for the occupations to which we have been accustomed, that we are stedfast in our pursuits and that we are restricted from countenancing visionary, though sometimes plausible schemes, which if adopted, might terminate in confusion and anarchy. It is

true, that which is capable of securing to us the highest degree of good, is also obnoxious to effects equally injurious. . We are, alas ! continually prone to fall into error, to obstinately close our eyes against the lights which have been afforded us for discovering the path by which we ought to proceed. As the progress of error is rapid, and as the consequences of it are ruinous, if some mean had not been devised for retracing the delusive pursuit, truth and with it every thing existing, would have long since perished. This mean has been the supply of characters whose minds were so framed as to brave every danger that might attend its investigation ; but as every thing is not true which fanciful imaginations suggest, it is absolutely necessary that whatever is advanced, although proposed by the most respectable authority and supported by the most persuasive arguments, in varying from commonly received opinions, should be carefully examined and never admitted until fully proved, It would be much more correct if condemnation were never to precede accurate enquiry ; but that could not be hoped for, unless the mass of mankind had their passions under perfect controul ; and if they had them under such a gov-

ernment, they would have no errors to correct. There are few men under the influence of passions so well regulated as not to resist the charge of being mistaken. The operation of the passions is generally prior to the exercise of reason; the publisher of new opinions, the accuser of incorrect principles, has these therefore first to encounter; but as the passions in the end always yield to reason, if the truth has been really discovered, if the doctrines adduced will bear that test, the issue must be according to his wishes. Give me then, my respectable auditors, a patient hearing, if what I shall offer should appear worthy of your candid enquiry, to that I make my appeal, and shall in the mean time submit to the penalties the excitement of the passions may inflict, in the humble hope that the influence of reason will ultimately decide in my favour. If even in this sanguine hope I should fail, I shall experience the consolation of having given a direction to the mind of other investigators, which may contribute to a degree of success all my predecessors have failed to accomplish.

The only support I can rationally hope for in the commencement, is from the disinterested,

that is to say those who are not of the profession. In such, prejudices may exist, but they cannot have their passions excited, and to such I would boldly say, they are the most deeply interested. To have a rational plan in the treatment of their diseases correctly pursued, must be to them of very great moment, and if a rational idea of these diseases can be conveyed to their minds, they will quickly discover how far the knowledge of those they employ is adequate to the task they undertake. If there should be sufficient evidence that an erroneous path has been pursued, the objects of practice will, in a very short time, exact a relinquishment of ascertained errors, and self interest will enjoin the study of medicine in such a way as may best promise the disclosure of truth, as may best secure the improvement of the science.

He who is so happy as to trace diseases to their true causes will bestow numerous and important benefits on mankind. How many unthought of truths will be discovered. How many errors exploded, and how will the number of our books be reduced. Books, which for bulk and number are terrifying to a student, more than ten pages of which contain irrelevant matter for one that af-

fords solid information. Half a life time, even the most extended, would be incapable of separating the useless from the useful, and then the head is so filled with a senseless jargon that it is seldom capable of retaining ~~any~~ what is [^]real benefit, without having it contaminated with false reasoning and inconclusive deductions. The art of interrogating nature by an appeal to facts is very delicate. The delusion of our senses, from preconceived opinions is continually presenting itself; and the probability is, that no man who has been strongly impressed with the doctrines of the schools ever will be able to accurately discriminate between the true and the false. It is highly favourable to the prosecutors of the medical art of the present day, that these doctrines are in great disrepute, and that a bias in their favour is seldom given. Hence the mind is better prepared for the reception of truth, and less opposition will be offered to those who undertake the investigation of it, than would have certainly been raised up against it in the bigoted ages past.

But to dwell no longer on evils past or expected, I proceed to submit to you the plan I propose to pursue, and shall only premise that

no zeal, no industry shall be wanting to compensate to you for the employments of your time in attending to what I have to offer.

A natural history of the diseases incident to life is what I propose, in the first instance, and in the pursuit, shall steadily adhere to the directions given to that end by the best philosophical law-giver that ever existed, the great Bacon. I shall give them in his own words, as furnished to us by his translator, Doctor Shaw, only suiting them to my particular purpose, in order to impress upon your minds what you may expect, and to enable you to judge how faithful I shall be to my engagements. He commences his introduction to his phenomena of the universe, in the following words.

As mankind appear so liable to err both in judging and experimenting, we would attempt to remedy this misfortune ; and cannot, perhaps be in any other way so successful as by shaking off the yoke of false doctrines and theories ; raise them from the languor, they lie under with respect to the operations of nature, and bring them by a faithful exposition of what is attainable by experience, to a more close and exact acquaintance with things themselves ; so that the understand-

ing, by being placed upon a secure eminence, may discover the ready way of procuring whatever is most useful and necessary.

The foundation of this design must be laid in a history of nature, for all the philosophy at present received, especially that which refers to diseases, appears to be built on too narrow a basis of natural history, and to have pronounced upon premises by much too limited. For having seized on certain traditions of experience, and this sometimes without a careful examination, men have trusted every thing else to contemplation, genius and dispute, with the assistance only of common logic for their better security. But they are to be admonished, and earnestly entreated to humble their minds, as they value their own happiness, and look for the object of which they are in pursuit in the great world about them : for unless a careful and approved natural and experimental history be procured, we must quit all thoughts of philosophy ; or can, at best, expect very slender advantages from it. Therefore, if we have any humility towards the Creator ; if we have any reverence for him, or any esteem for his works ; if we have any charity towards men, or any desire of relieving

their miseries and necessities ; if we have any love for natural truths ; any aversion from darkness, and any desire of purifying the understanding, medical investigators are to be most affectionately beseeched to lay aside preconceived notions and unsubstantiated conclusions, and now at length, condescend with due submission and veneration, to approach and to peruse the volume of the creation ; dwell some time upon it, and bringing to the work a mind well purged of opinions, idols and false notions, converse familiarly therein. This volume is the language which has gone out to all the ends of the earth, unaffected by the confusion of Babel : this is the language that men should thoroughly learn, and not disdain to have its alphabet continually in their hands ; and in the interpretation of this language they should spare no pains ; but strenuously proceed, persevere and dwell upon it to the last. How strictly has the following been verified ! Though the geniuses of all ages have united, or shall hereafter unite together ; though the entire race of mankind should have addicted, or should addict themselves to the medical science, though the whole habitable globe were nothing but universities, societies, colleges, and

schools of learned men; yet without such a natural and experimental history, as we have now in view, there neither could have been, nor can be any progress made in our science worthy of mankind. On the other hand, when such a history is procured, and duly furnished, with the addition of such auxiliary and leading experiments as either occur, or shall be struck out in the course of interpretation, the enquiry into nature, and particularly into this science, will be the work of only a few years, and therefore this history must be procured, or the business be deserted. For by this means alone can the foundations of a true and active philosophy be laid, and mankind ~~be~~ be made to see, as if awaked from a dream, what a difference there is between the fictions and the opinions of the brain and real effective philosophy; and, again, what it is, at length to consult nature about nature.

Such a history has been the object of my research for years. It will require years and leizure, with extensive opportunities to bring it to perfection. I have only a sketch of such a history to offer. It is better to offer a sketch than never to commence the work. There is one course I shall pursue which has been strangely neglected

by medical writers, and yet from such writers it might have been most naturally expected, and that is, never to lose sight of the Creator. Unless we have a suitable reference to the author of the work, unless we endeavour to penetrate his designs, we shall never be enlightened on the obscure parts of nature. In proportion as we discover the real intentions of Supreme wisdom, we shall succeed ; in the degree we mistake him, or give to his purposes a wrong interpretation, we must be obnoxious to error.

I shall first submit to your consideration a succinct account of the diseases of the human body, the causes of which have been made evident to the senses. I shall commence with the most familiar, and then relate what has been ascertained of those wherein the causes have been more rarely exemplified, but which will serve to prove that no part of the human body is exempt from the invasion of such causes.

I shall then proceed to consider the cause of suffering in the animals that are in nearest connexion with us, continue my enquiries through all the animal tribes down to the smallest insect, as far as the means of information have been within my reach ; and finally advert to the lead-

ing sources of destruction in the vegetable kingdom. In the pursuit of this enquiry I shall have occasion to notice much of the economy of the several species. Having prosecuted the investigation of what has been demonstrated to be the cause of disease and death in these correlative objects, I shall revert to man, and hope to reflect the light elicited from them on what is obscure in our own species. This will afford a clear and satisfactory comprehension of many things hitherto concealed under the most profound darkness, and terminate conjectures on the causes of diseases which have only tended to bewilder, but could in no instance enlighten the mind.

When we come to a perfect acquaintance with the nature of the cause, it will furnish, us with the means of more certainly arriving at a knowledge of the seat of disease. This has been a subject of much controversy; one error is always the parent of another; the judgment being under a delusion respecting the cause; the seat of our maladies must be likewise obnoxious to deception. When we know what the cause is, we shall readily comprehend how it acts, and on what it acts. I flatter myself with a hope of

contributing much towards an elucidation of what has been to the present hour so much misunderstood and show that the animal economy is regulated by laws much more consonant to every other principle of nature than has been hitherto imagined. This will be an important and deeply interesting enquiry. Almost any attempt towards freeing it from the manifold errors in which it is at present involved would be justifiable. With all possible humility I shall offer my conjectures concerning it, and shall greatly rejoice if I should have any share in promoting so great, so essential a good.

If the cause and seat of disease should prove to vary much from what has been conceived and taught respecting them, it necessarily follows that the general conception as to the operation of medicines is equally liable to error. The same course of investigation also necessarily extends itself to the rules by which we should be governed in the choice and application of remedies. I should be very far from insinuating that proper medicines have not been employed for the cure of diseases in every age of the world. The more I reflect upon this circumstance, the more I am amazed at the stu-

pendous wisdom by which every thing in the universe is conducted. Whilst every other animal is led by instinct to the choice of what is necessary to the removal of their diseases, it would be very extraordinary if the most perfect of sublunary creation, if man placed at the head of and destined to govern almost every other were left without a guide in so essential a concern. He has most certainly had one who has conducted him to the proper objects apparently inattentive to the erroneous reasonings employed respecting them. It is impossible to say how far success may attend the dissipation of errors in what appertains to diseases, and the methods of treating them ; but assuredly if no other benefit should result from such an enquiry, the satisfaction that must be experienced ~~in all~~ ^{now} comprehending the nature of what is to be done and clearly seeing the course that ought to be pursued, will be a blessed exchange for the confusion and doubting which at present exist. I beg not to be understood as alledging that any thing I can offer will completely obviate all the difficulties that must present themselves in the treatment of diseases. I well know this does not belong to so frail a mortal ; but I am confident

much may be done in promoting so desirable an end, I am also satisfied there is no other way under heaven by which we may in any degree approximate so valuable an acquisition except that which in the previous sheets has been seen so powerfully recommended. I shall, to the utmost of my power, undeviatingly pursue it, and leave the issue to him from whom alone every thing great and good proceeds. I shall studiously avoid proposing one sentiment that does not, according to my best judgment, fully accord with the laws he has given us for our own government, as far as I am capable of comprehending them, nor ever offer an opinion where I have not an ascertained fact to support it.

I would now venture to say to my brethren of the faculty, although there is not one of them who has yet evinced a desire to profit by my labours ; no, not although we have an infant school which professes to teach the art of healing, that there is much of what I have collected that must be useful to them in the treatment of diseases, whether they adopt or reject my deductions. The first part of my projected course, according to the plan I have formed, necessarily treats of the worms that infest the human body,

to recognize the symptoms by which each species is to be distinguished, the effects they evidently have on the system, and by what diagnostics their presence is to be discovered, must be a valuable acquisition. This branch of knowledge has been astonishingly neglected; it is only to be obtained by a strict search of numerous authors, for there is not one who has fully entered into the subject, and it is enforced in, I believe, no school of medicine at present existing. Who can peruse the following assertion of the celebrated Gaubius and not feel its importance.

After speaking of the various kinds of worms which infest the human body, he observes in page 380, of his pathology, that these insects, according to their several genera and species have their abode in the first passages, in which they more or less abound according to the age, sex, temperament, course of life, air, food, drink, country, seasons of the year, &c. nor are the subjects of them confined to a particular species, one is infested with the round worm, another with the tape worm, and a third with ascarides and so on. Analogy would lead us to believe that these insects are communicated from causes which exist out

of our bodies, are conveyed into them, where they multiply, undergo their destined mutations, and at length assume the appearance of the source from whence they originated, unless previously destroyed by the powers of nature. Although this opinion is in many respects objectionable, and extremely difficult to support, yet we ought not to despair of its accomplishment. Nature dictates this to make a part of her plan, unless there should be here a chasm in her works which we are rendered incapable of investigating, whilst in other instances of a similar description they are fully within our reach.

A multitude of such guests must often affect the health, which they injure in various ways, especially when they occupy the interior parts. They prove noxious to the first passages from their bulk, their number, their being entwined with each other, their weight, their obstructing the course of what should escape, thus producing constipation and often the iliac passion. From their motions, their creeping, their suction, and their irritation of the nerves, they occasion nausea, vomiting, singultus anxiety and inordinate movements of the stomach and intestines, spasm, eructations, flatus, rumbling in the bowels, pains of various

kinds in the viscera, swelling, a disturbed digestion of the aliments, an impediment to the absorption of the chyle, irregularity in the evacuations, sometimes costiveness, at others too great laxity : From their erosions, they excoriate, inflame, ulcerate, and perforate the guts. From their consumption of the chyle, a craving hunger or a ravenous appetite are liable and dispose to general corruption. Their corrupted dead bodies, and their accumulated feces dispose every thing, with which they are in contact to putrefaction. The local mischief they occasion excites the whole system, by the consent which subsists between the several parts, as well those that are near, as those that are at a distance, to morbid action. Hence by the waste of nourishment, an emaciation, a pallor, debility and atrophy. From the defective formation of chyle in being insufficiently purified, or adulterated with noxious mixtures, the body degenerates into a decay of all the animal functions. Finally, by the irritations arising from their several motions in changing their position, taking in their food, and performing the several functions appertaining to their nature, spasmodic affections may be reasonably attributed to them. The impediments to the freedom of

the circulation and secretion of the several fluids, may well be attended with a palpitation of the heart, a weak, an irregular, or an intermitting pulse ; with fainting, universal tremors, fevers, pains of various descriptions, vertigo, blindness, a singing of the ears, disturbed sleep, terrors, delirium, loss of speech, palsy, catalepsy, or an incapacity to motion ; apoplexy, tetanus or lock-jaw ; and especially to convulsions, and epilepsy, in all its varieties, the origin of all these maladies is to be sought for in these chief enemies of our species.”

Are not then the causes of so much evil well worthy of investigation ? are all the other productions of nature to be scrupulously examined, and is man with any consistency to stop at the chasm which presents, when his own body comes into consideration ? Is every thing that relates to the destruction of all the surrounding animals great and small, every thing that in any way relates to their economy, to be the objects of our most persevering study, of philosophers generally as well as professional characters particularly, *and is* what ~~and~~ more immediately regards themselves in these respects, to be wholly neglected by the first and but superficially noticed by the last. When

the reflecting mind becomes induced to direct its attention to this extraordinary phenomenon, it must assuredly excite surprise. To account for so astonishing an apathy respecting concerns so intimately connected with our first interests will not readily occur. The animated pathology, for so this doctrine is termed, as mentioned in the early part of this discourse, has been labouring to get in into notice for about one hundred and forty years. The first work published on the subject was in sixteen hundred and seventy one, by the celebrated antiquarian and elaborate searcher into the works of nature, the learned Jesuit Kircher. It was published in that year by Langius, a celebrated professor at Padua in Italy, and was received as a wonderful discovery, which would remove all difficulty in ascertaining the cause of every disease. It was well received by the public, and many subsequent authors of the same age appeared in favour of it. But it was too chimerical in the ideas suggested of the origin of the several causes, and supported too limitedly by facts to satisfy those who had, in the succeeding periods, made farther progress in natural philosophy; still there were too many things in it consonant to the phenomena of diseases to per-

mit its being wholly lost sight of. The author who has given the most satisfactory proofs of the real existence of an animated ~~animal~~ principle, being the immediate source of all our maladies, is Anthony Plenciz, a celebrated physician of Vienna, who gave to the world in 1762, four tracts, one on Cantagion, which has been strangely neglected ; one on the Epidemic of Cattle which raged in Germany in 1761, well received; one on the Small Pox, then much approved of, and lastly, one on the Scarlet Fever, which has claimed the approbation of the best judges. That on Contagion clearly proves that all the causes to which diseases were previously attributed were totally untenable, inconsistent with all the characteristics of the several maladies, and unsupported by any facts which could warrant the conclusions generally offered. On the other hand, he proved that in attributing disease to an animated principle, all their phenomena received a rational support, not only from the economy of the human system, but also from the ascertained manners of the assailants ; and these were substantiated by such numerous incontrovertible proofs as would have removed every doubt, would have been acceded to without any oppo-

sition on any other subject of human investigation.

If we ~~were~~ not so much under the dominion of self love, it would appear astonishing that we should determine to shut our eyes and our ears against every attempt to give us instruction on an occasion so deeply interesting. This should seem to prove that we must be so constituted as to abandon ourselves to our enemies, and to resist every mean by which we could obtain information either as to their nature or their manner of injuring us; and yet, when smarting under their ravages, we seek for assistance from every quarter that promises it. If all are in the same degree of ignorance respecting them, we cannot assuredly promise ourselves the same aid, as if those who undertake the task were well informed of every thing in the properties and mode of operating of the evil against which they have to contend. Circumstances appear to promise that this affection of our mind cannot be endless. The capacity to search into the works of supreme wisdom with which we are endowed is very extensive. This search has been directed in different ages of the world to almost every object of sense. The disclo-

asures that have been made have imparted not only high degrees of pleasure, but also much exultation in the discovery of a capacity to penetrate what was generally believed to reach beyond the limits of human intelligence.

It is observed by the ingenious and indefatigable Reaumur, in his history of Insects, which consists of six volumes in quarto, that an infinity of these little animals desolate our plants, our trees, and our fruits. It is not alone in our fields, or our gardens, that they commit their ravages ; they attack us in our houses, our goods, our furniture, our clothes, our poultry ; they devour the grain in our store-house ; they pierce all our wood-work ; they do not spare us, *even ourselves*. They have been traced through all their various operations and changes, on every occasion except the last. Here our progress has been arrested, here our efforts have been palsied. There is not yet an individual, whether naturalist or physician, who has traced diseases to this source, or viewed them as constituting a part of the general law of nature. We have seen that Gaubius, in Boerhave, and much more in Linneus and his followers, there are discoverable many hints to the same effect ; but previous to

my attempt, I believe I may assert there is not one who has seriously endeavoured to shew that there is equally one law by which every animal, without any exception, is undeviatingly governed. In this, as was indeed to be rationally expected, I have met with the most pointed opposition. I cannot expect to share a better fate than those who have preceded me in a career still more exalted, equally as on occasions of inferior moment. I have shewn the principle on which this depends, but I have no disquietude as to the event ; I shall proceed with my investigation—I shall perseveringly pursue the plan I have proposed and have not a shadow of doubt of procuring all the patronage which the occasion may require. I well know that this must come from those who cannot have their passions awakened in resisting me ; it must be from such as have no selfish considerations to mislead them or to avert them from the love of truth. I have indeed very little to personally exact ; it is well known to not a few in this city, that in my mode of life, I have few wants ; that the plainest fare is to me as acceptable as the richest viands, and that I have no inclinations which tempt me to incur expense. Having largely ad-

vanced in my sixty-sixth year, the charms attendant upon what are called the good things of this world, must be supposed to have in a great measure lost their influence, I have therefore no serious impediment to a continuance in the path I have been pursuing for nearly twenty years. The difficulties I have had to encounter have indeed increased my ardour. As long as health and life remain, I shall deem myself strictly in the performance of my duty whilst so employed, and I shall leave the result to that august Being who has made nothing in vain, and who often makes use of the humblest instruments to accomplish his all-wise purposes, lest presumptuous man should assume to himself the glory which belongeth alone to God.

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